

## **Abstract of the Disclosure**

A stator comprises a bobbin, plural pole plates, and an axle tube. A half of the plural pole plates is mounted on top of the bobbin and the other half of the plural pole plates is mounted to a bottom of the bobbin. The axle tube is extended through the pole plates and the bobbin to form a stator having four or eight poles. The magnetization is increased and the magnetic flux leakage is reduced by means of the increased overall thickness of the pole plates. The effective guided magnetic flux to the respective pole plate is gained. In addition, the radial dimension of the stator is reduced, as each pole plate is provided with the most efficient number of pole face(s) and the overall thickness of the respective pole face is reduced.